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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Patent Department
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EXAMINER

CORDRAY, DENNIS R

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/807,782	Applicant(s) DONNELLY ET AL.	
	Examiner Dennis Cordray	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/21/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On p 1, line 6, the number "20003" should be changed to "2003."

Claim Objections

Claims 24 and 42 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 24 and 42 depend from Claim 23 and 41 respectively and recite the further limitation that the aqueous composition and further filler are added sequentially to the cellulosic suspension. Claims 23 and 41 recite that the aqueous composition and further filler are added separately to the cellulosic suspension. If the additions are made separately, then one addition must occur after the other, thus the additions must be made sequentially.

Claim 22 and 40 are objected to because of the following informalities: In the second line of each claim, the word "is" should be changed to "are." Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23-24 and 41-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 23 and 41 recite that the aqueous composition and further filler are added separately to the cellulosic suspension. It is not clear if "added separately" means that the aqueous composition and further filler are intended to be added one after the other, or if they are added simultaneously but from separate feed points, or if they are added simultaneously and from separate feed points.

Claims 24 and 42 depend from Claims 23 and 41 thus inherit the indefiniteness of the parent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-17, 25 and 29-33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Rushmere et al (5543014).

Claims 1-16: Rushmere et al discloses a process for preparing water soluble polyaluminosilicate microgels (Abstract) comprising mixing an aqueous solution of an alkali metal silicate (source of silicate) and an aqueous solution of an acid and a dissolved aluminum salt to adjust the pH to the range from 2 to 10.5, then diluting with water to an SiO₂ content of less than or equal to 2% by weight (col 2, lines 45-63; col 3, lines 10-15). The gelation of the mixture then occurs in seconds to hours (goes substantially to completion), depending on the particular reaction conditions. The solutions are clear (a substantially uniform liquid) thus indicating that the polymerization has proceeded to substantial completion (col 3, lines 58-59). In an example, the solutions are stirred during the reaction, thus providing shear (col 4, lines 25-35, Example I) and maintaining a substantially uniform liquid. The product is a solution of dissolved microgels (amorphous gelled solids). The solutions are intended for use in a papermaking process (col 2, lines 3-32; col 3, lines 62-66), thus pumping the product from the reactor to either storage or directly to the papermaking process imparts additional shear to the reacted product. Rushmere et al is silent as to the temperature used for the reaction; however, using ambient temperatures in the range of 20-25 °C would be obvious to a person of ordinary skill in the art to avoid excess energy costs. Rushmere discloses a preferred source for silicate as alkali metal silicates, such as sodium silicate (col 2, lines 64-67). The reacted solutions can be further diluted to a

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SiO₂ content of 0.5% by weight for storage and/or application (col 3, lines 58-61; col 4, lines 25-42, Example I).

The aqueous polyaluminosilicate composition of Rushmere et al is capable of having the claimed properties of viscosity, surface area and S-value because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Claims 17, 25 and 29-33: Rushmere et al discloses the use of the aqueous polyaluminosilicate compositions as drainage and retention aids in papermaking processes (col 2, lines 3-22; col 3, lines 62-66). The process comprises forming a cellulosic suspension, forming and drying a paper. The aqueous polyaluminosilicate composition is added to the cellulosic suspension in an amount of 0.01 to 1% (100 g to 10 kg/tonne) of the dry weight of the furnish (col 3, lines 62-66). Examples are provided wherein additional filler, comprising precipitated calcium carbonate (PCC) is added to the furnish (col 4, lines 54-58, Example I). The drainage and retention system can further comprise a cationic or anionic polymer (col 3, line 66 to col 4, line 9).

Claims 1-33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Palmer et al (6406594).

Palmer et al discloses a method for manufacturing paper comprising using forming polymerized mineral networks about cellulosic fibers, taking the place of isolated particles of filler material deposited on or bonded to the cellulosic material (Abs). Thus the polymerized mineral network acts as a filler. The method comprises mixing a solution of sodium, lithium or potassium silicate and an aluminum sulphate solution (aluminum compound) and acidifying the solution to a pH of 7 to 9 to form a polyaluminosilicate gel (col 12, lines 23-30; col 15, lines 11-20). The reaction tank is agitated to prevent over-solidification (col 19, lines 13-16 and 35-37). The reaction can be carried out prior to adding the composition to a cellulosic suspension (col 14, lines 48-62). In a possible commercial embodiment, the gelled solution is pumped (and thereby sheared following the reaction) to the suction side of a fan pump for addition to the paper machine (col 19, line 64 to col 20, line 2). The mixture acts as a strength agent and drainage and retention aid (Abs; col 31, lines 32-61, including the Examples in Table 2). Examples are given wherein the amount of silicate used varied from 3.3 to 12.1% (which corresponds to 33 to 121 kg/tonne) (cols 30-33, Examples 1 & 2, Tables 2 & 3). A precipitated calcium carbonate filler can be added to the system or precipitated in-situ via carbonation of calcium oxide (Abs; Examples 1 and 2). Cationic starch can be used as an additional retention aid and is added after the filler (col 33, lines 1-13).

The aqueous composition of Palmer et al is capable of having the claimed form of gelled solids dispersed in an aqueous medium as well as the claimed properties of viscosity, surface area and S-value because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima*

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facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent.

Palmer et al discloses that all commonly used wet-end retention systems are suitable, including cationic or anionic polymers, alum, particles and microparticles and mixtures thereof (col 29, lines 20-29). Example handsheets were made by draining a papermaking furnish, forming a sheet and drying (Cols 30-66, Examples 1-20).

Claims 34-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rushmere et al or Palmer et al in view of Chen et al (2002/0066540).

Rushmere et al and Palmer et al do not disclose that separating elements of the drainage and retention system by shear stages or the composition of the microparticle.

Chen et al discloses a process for making paper comprising adding a drainage and retention system comprising a siliceous material, organic microparticles and additional polymers (p 1, pars 13-14; p 4, par 48). The siliceous material can be silica microgels, polysilicates or polyaluminosilicates (p 2, par 20) that can be formed in a manner similar to that of the instant invention (p 2, par 24). As discussed above, the pump used to deliver the gelled materials to the cellulosic suspension provides shearing to the gelled material. The microparticles can be crosslinked organic polymers (p 2, par 29). Other siliceous materials that are suitable include colloidal silica, zeolites, swellable clays, which are all known microparticles as well.

Chen et al discloses adding the siliceous material and the microparticles sequentially (preferably the microparticle is added last) or combining them into a mixture prior to adding them to the cellulosic suspension (p 4, par 47). A cationic polymeric flocculating material (retention aid) can be added to the cellulosic suspension, followed by a mixing, screening or cleaning stage (shear stage), followed by addition of the siliceous material and microparticle. The cationic flocculating aid can be added into a filler composition, such as a PCC slurry (pp 4-5, pars 48-49). The drainage and retention system can comprise multiple additions and multiple shear stages. One component can be added, followed by shearing, followed by a second component, followed by further shearing, followed by a third component. It is preferred that the last component added is a microparticle (p 6, par 63). In other embodiments, various additional combinations of drainage and retention system components are disclosed wherein all or some of the components can be added together or they can be separated by one or more shear stages (p 6, pars 62, 64 and 65). Thus many combinations of addition steps and shear stages are effective.

The art of Rushmere et al, Palmer et al and the instant invention are analogous as pertaining to the use of polyaluminosilicates along with drainage and retention systems in papermaking processes. It would have been obvious to a person of ordinary skill in the art to add the retention and drainage aids in any of the claimed combinations in the paper of Rushmere et al or Palmer et al in view of Chen et al as functional equivalent processes. It would also have been obvious to use the claimed

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polyaluminosilicates as fillers and or drainage and retention aids as well known uses for the products.

Double Patenting

Applicant is advised that should claim 17 be found allowable, claim 47 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). In the instant case, Claim 17 depends from Claim 7, which depends from Claim 1, thus Claim 17 carries all of the limitations from Claims 1 and 7, which are the same limitations recited in Claim 47.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-47 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-16 and 20-50 of copending Application No. 10/548357.

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This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim 1-47 of this application conflict with claims 1-16 and 20-50 of Application No. 10/548357. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure [Sunden et al (4388150), Rushmere (4954220), Rushmere et al (5470435), Donnelly et al (US 2004/0238137)]. The first three pertain to other uses for polyaluminosilicate microgel suspensions. The last is the U.S. pre-grant publication of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Cordray whose telephone number is 571-272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRC

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